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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/488,180	06/07/95	CARNEY	W 40441-CY/JPW

EXAMINER
HUNT, J

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

PTO-90C (Rev.11/00)

1- File Copy

Office Action Summary

Application No.	Applicant(s)
08/488,180	Carney et al.
Examiner	**Art Unit**
Jennifer Hunt	1642

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 4, 1998* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *13-24* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *16-24* is/are allowed.

6) ☒ Claim(s) *13-15* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

Response to Amendment

Claims 13-24 are pending in the application and under consideration. Upon further consideration, the indicated allowability of claims 13-15 is withdrawn in view of the new rejections set forth below.

The examiner and art unit for this application have changed. Please address future correspondence to Jennifer Hunt, Art Unit 1642.

Claim Rejections - 35 U.S.C. § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The term "corresponds substantially" in claims 13-14 is a relative term which renders the claim indefinite. The term "corresponds substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The specification discloses that "corresponds substantially provides conservative additions, deletions and/or substitutions." (See page 11, lines 1-2 of the original disclosure).

It is further noted that at page 11 of the specification where "corresponds substantially" is described, the term "conservative" only modifies "additions"; the terms "deletions and/or substitutions" are not modified by "conservative" and thus encompass any deletion and/or

substitution. Lastly, it is not clear what extent of sequence variation could be tolerated and still meet the limitations of the claims. Even if the term "conservative" described any of the possible sequence modification, "conservative" is a relative term who's metes and bounds are unclear.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 13-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

The claims are broadly drawn to any monoclonal antibody which is capable of binding "p100" which is a neu related protein having a molecular weight from about 97,000 daltons to about 115 daltons which corresponds substantially to the extracellular domain of the human *neu* gene product, and which is detectable in biological fluid. Thus the claims encompass any monoclonal antibody which is capable of binding a compound having a molecular weight in the broad range of about 97,000 daltons to about 115,000 daltons and which has any number of additions, deletion and/or substitutions in the compound's structure.

Thus the claims are drawn to a large genus of molecules. In the case of small identified amino acid residues claimed with open language, the genus of the polypeptides comprising a partial sequence encompasses a variety of subgenera with widely varying attributes. The specification discloses only the structural features of one species, the human neu polypeptide, and the corresponding antibodies which bind such. The specification lacks information to lead one of ordinary skill in the art to understand that the applicant had possession of the broadly claimed genus of antibodies at the time the instant application was filed.

Vas-Cath Inc. V. Mahurkar, 19 USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (*See Vas-Cath* at page 1116).

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. 112 is severable from its enablement provision (see page 115).

Furthermore, In *The Reagents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that while Applicants are not required to disclose every species encompassed by a genus, the description of a genus is achieved by the recitation of a representative number of DNA

molecules, usually defined by a nucleotide sequence, falling within the scope of the claimed genus. At section B(1), the court states that "An adequate written description of a DNA...'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention".

Applicant is referred to the guidelines for 112, first paragraph, published in the Official gazette and also available on www.uspto.gov.

Claim Rejections - 35 U.S.C. § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Prior to setting forth the rejections, it is noted that the effective filing date of the instant claims is determined to be 9/29/1989. Prior to this date, none of the CIP applications cited for priority disclosed the full scope of the instant claims. Specifically, limitations and terminology

including "p100" and "molecular weight from about 97,000 daltons to 115, 000 daltons" were not disclosed.

Applicant argues that the disclosure of an antibody which binds to the extracellular domain of human *neu* is sufficient support for the full scope of the generically claimed antibodies, however the claims are not limited only to antibodies which bind human *neu*, but rather broadly encompass any monoclonal antibody which is capable of binding "p100" which is a *neu* related protein having a molecular weight from about 97,000 daltons to about 115 daltons which corresponds substantially to the extracellular domain of the human *neu* gene product, and which is detectable in biological fluid. Thus the limitations instantly claimed were not supported by priority applications until 9/29/1989.

6. Claims 13-15 are rejected under 35 U.S.C. 102(a) as being anticipated by McKenzie et al., Oncogene, Vol. 4, No. 5, pages 543-548, May 1989.

McKenzie et al. teaches hybridoma cell lines secreting OD3 (HB 10204), NB-3 (HB 10205), and TA-1 (HB 10206), all of which bind the extracellular domain of the human *neu* gene product. Applicant argues that these references are not prior art because the effective filing date of the instant application is prior to the publication date of the instant reference, however as set forth above, the effective filing date of claims 13-15 is 9/29/1989, which is after publication of the instant application.

7. Claims 13-15 are rejected under 35 U.S.C. 102(a) as being anticipated by Masuko et al., Jpn. J. Cancer Research, Vol. 80, pages 10-14, January 1989.

Masuko et al. teaches a hybridoma cell line secreting monoclonal antibody SV2-61, which binds the extracellular domain of the human *neu* gene product. Applicant argues that these references are not prior art because the effective filing date of the instant application is prior to the publication date of the instant reference, however as set forth above, the effective filing date of claims 13-15 is 9/29/1989, which is after publication of the instant application.

8. Claims 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Ring, US Patent 6,054,561.

Ring, US Patent 6,054,561 teaches a substantially purified human *neu* related protein comprising the extracellular domain of a *neu* related gene product and which has a molecular weight from about 95,000 daltons to about 115,000 daltons, and the antibody which binds such (113F1) (see for example, abstract, column 5, lines 24-40, and column 27, lines 1-40).

9. Claims 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hudziak et al., US Patent 5,720,937 or 5,772,997.

Hudziak et al., US Patent 5,720,937 teaches a monoclonal antibody (for example, 4D5) which binds a substantially purified human *neu* related protein comprising the extracellular

domain of a *neu* related gene product and which has a molecular weight from about 95,000 daltons to about 115,000 daltons. (see especially abstract and column 18).

Hudziak et al., US Patent 5,772,997 teaches a monoclonal antibody (for example, 4D5) which binds a substantially purified human *neu* related protein comprising the extracellular domain of a *neu* related gene product and which has a molecular weight from about 95,000 daltons to about 115,000 daltons. (see especially column 18 and the claims).

Claim Rejections - 35 U.S.C. § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernards et al., PNAS, Vol. 84, pages 6854-6858, October 1987, or Hudziak et al., US Patent 6,015,567, in view of Campbell, Monoclonal Antibody Technology, 1984.

Bernards et al. teaches a human *neu* related protein (rat *neu*) comprising the extracellular domain of the *neu* gene product, and which has a molecular weight of 100 daltons (see for example, page 6855 and figure 2).

Hudziak et al., US Patent 6,015,567 teaches a substantially purified human *neu* related protein comprising the extracellular domain of a *neu* related gene product and which has a molecular weight from about 95,000 daltons to about 115,000 daltons (see for example, column 1, lines 15-20, column 6, line 55-column 7, line 6, and figure 12 (including description)).

Bernards et al. and Hudziak et al., US Patent 6,015,567 fail to teach generating monoclonal antibodies to the extracellular domain of human neu.

Campbell, Monoclonal Antibody Technology teaches methods for generating monoclonal antibodies to any macromolecule and further teaches that "It is customary now for any group working on a macromolecule to both clone the genes for it and make monoclonal antibodies to it (sometimes without a clear objective for their application)." Campbell further teaches that monoclonal antibodies are useful for protein purification and for studies and analysis.

Therefor it would have been *prima facie* obvious to one of skill in the art to generate monoclonal antibodies to the proteins of Bernards et al. and Hudziak et al., US Patent 6,015,567, using the techniques of Campbell et al., and one would have been motivated to do so because antibodies are useful for purification of proteins and for research studies.

Claims 16-24 are allowed. Claims 13-15 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Hunt, whose telephone number is (703) 308-7548. The examiner can normally be reached Monday through Thursday 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa can be reached at (703) 308-3995. The fax number for the group is (703) 305-3014 or (703) 308-4242.

Communications via internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**anthony.caputa@uspto.gov**].

All internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists the possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 308-0196.

Jennifer Hunt

October 11, 2001

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